

REMARKS

Claims 1-5, 7-14, 16-19, 21-24 and 26-28 are pending. By this Amendment, claims 6, 15, 20 and 25 are canceled without prejudice or disclaimer and claims 1, 10, 19 and 24 are amended. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Applicants appreciate the courtesies extended by Examiner Angebrannt to Applicants' representative during the personal interview conducted December 18. The substance of the interview is summarized in the following remarks.

During the interview it was agreed that the amendments presented herein overcome the rejection including Spanhel et al. (U.S. Patent 5,470,910) would be withdrawn. Accordingly, it is respectfully submitted that the rejection of claims 1-5, 7-14, 16-19 and 21-28 under 35 U.S.C. § 103(a) over Iida et al. (EP 0 580 346 A2) in view of Murray et al. (Synthesis and Characterization of Nearly Monodisperse CdE (E= S, Se, Te) Semiconductor Nanocrystallines), Spanhel et al., and Liz-Marzan et al. (WO 99/21934) is moot.

Claims 1-28 were rejected under 35 U.S.C. § 103(a) over Iida et al. in view of Murray et al. and Liz-Marzan et al. The rejection is respectfully traversed.

Each of independent claims 1, 10, 19 and 24 recites, amongst other features, that the films include a super-resolution film containing a polymer matrix and particles each consisting of a semiconductor particle and an organic group covalently bonded thereto. The organic group covalently bonded to the semiconductor particle is directly in contact with the polymer matrix and wherein even in the case where a part of polymer molecules in the polymer matrix is covalently bonded to the semiconductor particle, a ratio of the polymer molecules bonded to the semiconductor particle is 1 mol % or less of the entire polymer molecules in the polymer matrix.

During the interview Applicants' representative argued that neither Iida et al. nor Liz-Marzan et al. disclose or suggest a super-resolution film containing a polymer matrix and particles each consisting of a semiconductor particle and an organic group covalently bonded thereto. In addition, Applicants' representative noted that Liz-Marzan et al. do not disclose or suggest an organic group covalently bonded to the semiconductor particle that is directly in contact with a polymer matrix. Applicants' representative also argued that Murray et al. do not disclose or suggest dispersing semiconductor particles in a polymer matrix.

Examiner Angebrannndt indicated that Murray et al. are relied on for the teaching of a process in which semiconductor particles are dispersed in solvents to reduce the polydispersity and improve the uniformity of surface capping. Examiner Angebrannndt stated that he believed Murray et al. would have motivated one of ordinary skill in the art to modify the resin matrix material of Iida et al.

Examiner Angebrannndt also indicated that the disclosure of Liz-Marzan et al. is relied on for teaching stabilizing particles and a method of preparing stabilized particles by providing a coating on the particle that is insulating, semi-conducting, metallic, or combinations thereof. Examiner Angebrannndt also stated that Liz-Marzan et al. disclose that the coating may be attached to the semiconductor through a bi-functional ligand including a first functional group and a second functional group.

During a discussion of whether semiconductor particles bonded with SiO₂ through an organic group can provide satisfactory super-resolution films, Examiner Angebrannndt noted that samples 2A and 2E of the instant application include an R group, whereas samples 2B, 2C, 2D and 2F do not include an R group.

Applicants are in the process of preparing a Declaration under 37 C.F.R. § 1.132 that will summarize the differences between samples 2A, 2E and 2B-D and F. It is respectfully submitted that such a Declaration will establish that the reliance on Liz-Marzan et al. for the teaching of the effects of bonding of ligands to particles fails to cure the deficiencies of Iida et al. and Murray et al. The Declaration will be filed prior to the expiration of Examiner Angebrannndt's period for consideration of this reply.

Respectfully submitted,
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